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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/900,068	07/06/2001	Gerald E. Markley	GJH-0102	8590

7590 09/05/2003

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EXAMINER
GRIFFIN, WALTER DEAN

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 09/05/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/900,068	MARKLEY ET AL.	
	Examiner	Art Unit	
	Walt r D. Griffin	1764	

-- Th MAILING DATE of this communication app ars on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 July 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Response to Amendment

The objection to the specification and the claim rejections under 35 USC 112 and 103 as described in paper no.4 have been withdrawn in view of the amendment filed on July 16, 2003. Accordingly, the arguments concerning these rejections are moot and will not be addressed.

A new rejection follows.

Claim Objections

The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 22 has been renumbered as 21.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9 and 12-19 rejected under 35 U.S.C. 103(a) as being unpatentable over Ushio et al. (US 5,888,379).

The Ushio reference discloses a process for removing sulfur and nitrogen from a hydrocarbon oil. The process comprises passing the oil to a first stage hydrotreatment step that can operate in cocurrent or countercurrent flow of oil and gas. This first step results in an oil with a decreased sulfur and nitrogen concentration as compared to the feed. The minimum amounts of sulfur and nitrogen in the oil after the first step are 0.01 mass percent. The catalyst used in the first step preferably contains a combination of 2 metals chosen from cobalt, molybdenum, and nickel. Conditions in the first step include a temperature with a lower limit of 340°C and a pressure of at least 8 MPa. The effluent from the first reaction zone is then passed to a second hydrotreatment step. This second hydrotreatment can also operate in cocurrent or countercurrent flow of oil and gas. This second step results in an oil with a decreased sulfur and nitrogen

concentration as compared to the effluent from the first step. Conditions in the second step include a temperature with a lower limit of 200°C and a pressure of at least 1 MPa. The catalyst used in the second step can contain Group VI and VIII metals. See column 3, line 63 through column 4, line 50; column 5, lines 37-65; column 6, lines 6-29; column 7, lines 5-11 and 56-67; column 8, lines 1-15 and 52-61; and column 9, lines 35-52.

The Ushio reference does not disclose the claimed feeds, does not disclose the metal concentrations in the catalysts, and does not explicitly disclose the combinations of catalytic metals.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Ushio by utilizing the claimed feeds because the claimed feeds would have similar chemical and physical properties as the disclosed feeds and therefore would be expected to be effectively treated in the Ushio process.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have utilized the claimed metal combinations and amounts in the catalysts of Ushio because these metals fall within the general class of metals disclosed by Ushio and therefore would be expected to be effective in the process. Additionally, any amount of metals including the claimed amounts that would be catalytically effective would be used by one having ordinary skill in the art.

Claims 10 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushio et al. (US 5,888,379) as applied to claims 1 and 12 above, and further in view of Trachte et al. (US 5,198,099).

As discussed above, the Ushio reference does not disclose an additional reaction zone following the second reaction zone.

The Trachte reference discloses the hydrocracking of a petroleum distillate that has been previously hydrotreated in a two-stage hydrotreatment process. See col. 1, lines 45-66.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Ushio by including a hydrocracking step following the second hydrotreating zone as suggested by Trachte because the resulting product will be substantially free of heteroatoms and have other desired properties and because the hydrocracking zone will have long term activity maintenance since the feed to the hydrocracking zone will be sweet.

Claims 11 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ushio et al. (US 5,888,379) as applied to claims 1 and 12 above, and further in view of Scott (US 3,425,810).

As discussed above, the Ushio reference does not disclose the use of a reaction stage that contains a vapor passageway.

The Scott reference discloses a hydrotreating apparatus that contains a vapor passageway through or around at least a portion of a catalyst bed. See Figure 1 and column 5, lines 5-12.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Ushio by utilizing an apparatus that contains a vapor passageway through or around at least a portion of a catalyst bed as suggested by Scott because disruption and attrition of the catalyst is reduced and because liquid entrainment in the vapor would be eliminated.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is 703-305-3774. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0651.

Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
September 2, 2003